DOCUMENT RESUME

ED 420 213 HE 031 253

TITLE	Return on Investments: Employment Five and Ten Years Later. Survey of the Advanced Degree Completers of 1986-1991.
INSTITUTION	Oregon State System of Higher Education, Portland. Office of Academic Affairs.
PUB DATE	1997-03-03
NOTE	36p.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Research (143)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*College Graduates; Demography; Doctoral Degrees; *Educational Attitudes; Employment Level; *Employment Patterns; *Graduate Study; Higher Education; Income; Masters Degrees; *Outcomes of Education; Second Languages; Tables (Data)
IDENTIFIERS	Oregon State University; Portland State University OR; University of Oregon

ABSTRACT

This study sought to identify longer-term consequences for employment of students completing advanced degrees at the University of Oregon, Oregon State University, and Portland State University. Telephone interviews were conducted in November 1996 with 1,236 advanced-degree recipients who had completed degrees between 1986 and 1991. The study found that 93 percent of respondents were employed, and that 94 percent reported that they were satisfied with the education they had received. It also found that 61 percent of respondents took jobs in Oregon, and that most graduates had jobs in Portland rather than in other Oregon regions. The survey results indicated that 65 percent of the respondents completed an internship, and that the median personal income in 1995 for graduate-degree recipients was between $40,000 and $49,999. The study also found that 20 percent of the respondents were employed in jobs in the United States that require the use of a second language. Seventeen data tables present additional results. (MDM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 420 213

Return on Investments: Employment Five and Ten Years Later

Survey of the Advanced Degree Completers of 1986-1991

Office of Academic Affairs
P.O. Box 3175
Eugene, OR 97403

March 3, 1997

HE 031 253

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Oregon State Board of Higher Education
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Contents

Page

Executive Summary i

Background 1

Profile of Survey Respondents 1

Findings 2

What proportion of OSSHE graduates are employed? 2

Do employment experiences vary by degree major and level? 3

Are the graduates employed in jobs related to their degrees? 3

In what occupations and industries do these graduates find employment? 4

Where do OSSHE graduates find employment? 5

Do OSSHE graduates continue their education following degree attainment? ... 7

How much are OSSHE graduates earning? 7

Did the OSSHE graduates gain practical experience? 8

How do OSSHE graduates rate the education they received? 10

What advice do OSSHE graduates offer to improve graduate programs? 11

Summary and Conclusions 11

Tables

1 Representativeness of Survey Respondents Compared to OSSHE 1990-91 Advanced Degree Completers (UO, OSU, PSU) 15
2 OSSHE Graduate Outcome Survey 16
3 Employment Status 17
4 Employment Status for Selected Majors 18
5 Employment by Occupation Type 19
6 Employment by Industry Type 20
7 Employment by Company Type 21
8 Employment by Major and Company Type 22
9 Employment by Location by Institution 23
10 Location of Employment by Degree Obtained 24
11 Employment in Oregon, by County and Institution 25
12 Geographic Location of Employment by Major 26
13 Personal Income 27
14 Work Place Preparation 28
15 Rate Education Received 29
16 Satisfaction with Education 30
17 Comparison of Respondents 31

Executive Summary

This study sought to identify the longer-term consequences on employment of completing an advanced degree at the University of Oregon (UO), Oregon State University (OSU), and Portland State University (PSU). These institutions awarded the majority (89 percent) of master's, professional, and doctoral degrees in OSSHE (1995-96). The Chancellor's Office contracted with UO Oregon Survey Research Lab (OSRL) to conduct telephone interviews of advanced degree recipients who completed degrees between 1986 and 1991. Slightly more than 1,200 interviews were completed in November 1996. The broad goals of this survey were to obtain valid and reliable information from UO, OSU, and PSU graduate degree recipients regarding their assessment of the value and quality of the education received. Specifically, the State System wanted to learn more about the employment and socioeconomic achievement of graduates, their student experiences, and their satisfaction with the education received. These studies are part of the OSSHE's assessment and accountability program. The Chancellor's Office provided special project funds to support these assessment efforts.

Employment and Socioeconomic Achievement of OSSHE Graduates

Ninety-three percent of those who completed a graduate or professional degree five to ten years ago are employed. Only one percent say they are unemployed and looking for work.

- Ninety-seven percent are employed in the managerial and professional specialty occupations, such as executives, managers, engineers, architects, computer scientists, nurses, teachers, lawyers, professors, musicians, and social workers. These are occupations in which tremendous growth is projected for the next decade as the workforce aligns with the information age economy.

- Employment varies somewhat by major, with slightly higher employment for graduates in engineering (96 percent), business (96 percent), education (94 percent), and math and sciences (94 percent).

Type of Company

- The respondents are employed in all sectors of the economy including government (24 percent), public schools (33 percent), private companies (23 percent), nonprofit organizations (10 percent), and self-employed (10 percent). Eight of 10 respondents who work for a private company hold master's degrees (compared to 13 percent with doctorates).

- The majority employed in private businesses majored in one of three areas — business (23 percent), math, computer science, and physical science (21 percent), and engineering (12 percent.) For all majors, there appear to be some opportunities in each of these sectors.

Location

- Sixty-one percent of the respondents are employed in Oregon and only 20 percent left the west coast to take employment.

- Among those who work in Oregon, 42 percent are employed in the Portland tri-county area.

- Graduates tend to be employed near their alma mater — 74 percent of those with PSU degrees work in the Portland tri-county area, 58 percent of those with UO degrees work in Lane County, and 30 percent of those who received degrees from OSU work in Benton County.

- For respondents employed in Oregon, the Portland area is the destination for advanced degree completers in business (64 percent) and engineering (55 percent).

Income

- Median personal income in 1995 for graduate degree recipients was between $40,000 and $49,999.

- Twenty-seven percent of the respondents earned more than $50,000 and nine percent earned more than $70,000 per year.

Workplace Preparation Experiences

Graduate and professional students gain experience using their content knowledge and skills in a work environment in several ways. These include completing an internship (or practicum) in an off-campus site relevant to one's specialization, working with a faculty member on a research or policy analysis project, or serving as a teaching or a research assistant.

- Sixty-five percent say they completed an internship, 46 percent say they worked as a research or teaching assistant, and 50 percent indicate they worked on a research or policy-related project with a faculty member.

- OSU graduates are more likely to say they worked on a research project (63 percent compared to 54 percent at UO and 33 percent at PSU).

- Those most likely to have worked as a teaching or research assistant obtained doctorates (82 percent compared to 67 percent of those who obtained professional degrees and 44 percent of those who obtained master's degrees).

One-fifth of those employed in U.S. indicate they use a language other than English on the job.

- Of those, 60 percent speak Spanish, 22 percent use another European language, and 9 percent use an Asian language.

- Only one percent of the graduates from these institutions majored in a foreign language.

- The majority of those who use a language other than English in the workplace are employed in four industries — education (61 percent), professional services (8 percent), health services (6 percent), and public administration (6 percent).

Satisfaction and Rating of Education Received

Based on their experiences since graduation, 24 percent of those who obtained advanced degrees rate the education they received as "excellent," 55 percent "very good," 18 percent "good," 3 percent "fair," and 0.3 percent "poor." When asked if they had to do it all over again, would they go into the same program, 83 percent said "yes."

Ninety-four percent of the respondents say they are satisfied with the education they received.

- There are no significant differences in satisfaction among graduates of UO, OSU, and PSU.

- Those who said professors did a good job integrating research findings into classroom materials were more likely to be satisfied.

- Those who had been involved in a research project or policy-related project with a faculty member were also more satisfied.

Advice Offered to Improve Graduate Programs

When asked an open-ended question about what advice they would offer to improve the graduate degree programs they were in, 23 percent mentioned things concerning academics (such as class size, availability, selection, quality and content, and program requirements); 18 percent mentioned the value of practical, hands-on experience; 17 percent had suggestions for teaching; and 9 percent voiced concerns about OSSHE's poor state support.

Conclusion

The growing importance of knowledge-based industries in the global economy increases their reliance on the availability of well-educated persons. The results of this study confirm that high quality graduate and professional programs provide a stream of highly educated workers available for Oregon's managerial and professional jobs in the workforce in support of the state's economy.

Return on Investment: Employment Five and Ten Years Later

Survey of the Advanced Degree Completers of 1986-1991

Background

To obtain a better understanding of the results from completing an advanced degree, the Oregon State System of Higher Education (OSSHE) recently completed a survey of its graduates. This study sought to identify the longer-term employment consequences of completing an advanced degree at the University of Oregon (UO), Oregon State University (OSU), and Portland State University (PSU). These institutions award the majority (89 percent) of master's, professional, and doctoral degrees in OSSHE (1995-96).

The survey focused on the employment and socioeconomic achievement of graduates (including current work force status, occupation, industry, geographic area of employment, and personal income), their student experiences (whether they completed an internship), and their satisfaction with the education received (including their overall rating of the quality education received, the helpfulness of their education in employment). This study is part of the OSSHE's assessment and accountability program. The Chancellor's Office provided special project funds to support this assessment effort.

The Chancellor's Office contracted with the UO Oregon Survey Research Lab (OSRL) to conduct telephone interviews of advanced degree recipients who completed degrees between 1986 and 1991 (Table 1). Interviews were completed for a total of 1,236 graduates including 411 PSU graduates, 413 OSU graduates, and 412 UO graduates. The response rate was 55 percent (Table 2).[1] A companion study not included in this report identifies what OSSHE graduates of 1994-95 were doing six to twelve months following graduation.

Profile of Survey Respondents

Fifty-five percent of OSSHE alumni in the sample are female. The median age is 42, with an age distribution of 1 percent under age 30, 38 percent age 30-39, 43 percent age 40-49, 16 percent age 50-59, and 2 percent age 60 or older. The majority are white (4 percent Asian or Pacific Islander and each other minority group falls below 2 percent). Ninety-five percent are U.S. citizens.

---

[1] UO, OSU, and PSU worked with the Chancellor's Office and with UO's Oregon Survey Research Laboratory (OSRL) to develop the study's parameters and questions. UO, OSU, and PSU each provided OSRL with data disks containing basic alumni information for persons who received advanced degrees between 1986 and 1991. From these, OSRL drew random samples for each campus, conducted the telephone interviews, entered, coded, and analyzed data. Telephone calls were not made outside the United States, so information was not obtained about former graduates who are employed in other countries. The margin of error for this survey is about plus or minus 3 percent for the entire study sample and about plus or minus 5 percent for the separate campuses. The actual margin of error varies from question to question.

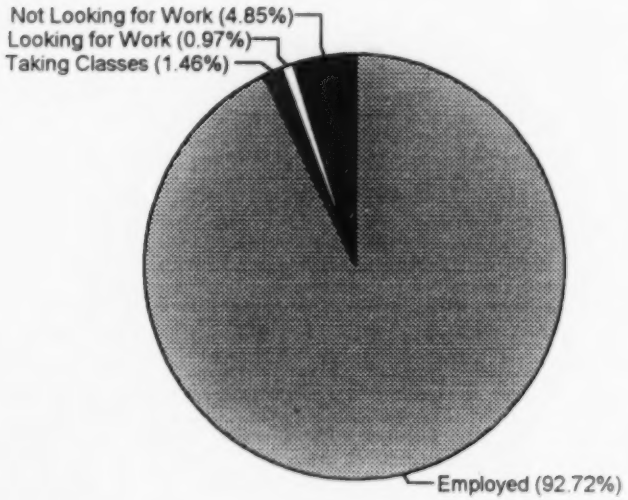
Among the alumni interviewed, their majors were distributed as: 34 percent education, 9 percent business, 9 percent physical, life, and biological sciences; 8 percent criminal justice, human services, and public administration; 7 percent social sciences; 6 percent liberal arts and humanities; 5 percent agriculture, forestry, and marine science; 5 percent health, physical education, and recreation; 4 percent computer science, math and statistics; 4 percent engineering; 2 percent journalism; 2 percent health-related professions; and 1 percent or less each in architecture, home economics, foreign languages, law, and fine arts. This random sample varies slightly from the graduate degrees awarded during this period. For example, of the almost 3,000 graduate degrees awarded by UO, OSU, and PSU in 1989-90, 5 percent were in engineering, 31 percent in education, 12 percent in business, and 5 percent in agriculture, natural resources, and fisheries.

Findings

What proportion of OSSHE graduates are employed?

Ninety-three percent of those who completed a graduate or professional degree five to ten years ago are employed (78 percent full-time and 15 percent part-time). Only 1 percent say they are looking for work (Table 3).

Employment Status



Do employment experiences vary by degree major and level?

Employment varies somewhat by major with slightly higher employment for graduates in engineering (96 percent), business (96 percent), education (94 percent), and math and sciences (94 percent). Graduates in liberal arts and humanities (87 percent) have lower employment and are more likely (as are education majors) to be employed part-time (Table 4). Although more than 9 of 10 respondents from the three universities are employed, OSU graduates are more likely to be employed full-time.

There are negligible employment differences by degree level (95 percent of doctorates compared to 93 percent of master's degree completers say they are employed). However, 87 percent of those with doctorates are employed full-time compared to 76 percent of master's degree recipients.

There could be several reasons for the differences in employment, including personal choices of the graduates and the trend in the economy to use more part-time and temporary workers. Very few of these graduates (less than 1 percent) indicate they are looking for work, but the majority of those who are looking for work hold master's degrees. It is widely believed that the master's degree is becoming the entry-level credential for a growing number of jobs.

Are the graduates employed in jobs related to their degrees?

Of great interest is whether a graduate finds work related to the degree earned. More than three-quarters of respondents state their current job is related to the degree obtained. Nevertheless, there are some discipline differences.

- Graduates in education (85 percent), health-related fields (83 percent), and agriculture and forestry (83 percent) report greater matches between their education and current employment.

- Business (63 percent) and social sciences (66 percent) report lower levels of correspondence between their education and current employment.

- Doctoral and professional degree recipients are somewhat more likely to be working in the area of their degree (about 90 percent) than master's degree recipients (75 percent).

- The institution from which a respondent earned a degree appears to have no significant impact on the perception of relevance of the degree to their current employment (UO 77 percent, OSU 76 percent, and PSU 79 percent).

These differences are not unexpected as some majors may develop more broadly based knowledge and skills that are easily applied and transferred to other contexts. Furthermore, the data do not address specialization differences within majors (such as

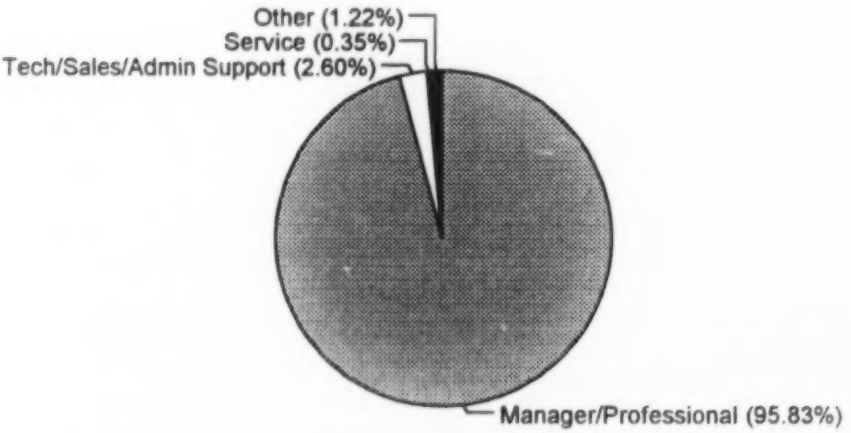
business majors in marketing, management, or accounting may have different experiences).

One-fifth of those employed in the United States indicate they use a language other than English on the job. Of those, 60 percent speak Spanish, 22 percent use another European language, and 9 percent use an Asian language. (Although only 1 percent of the respondents majored in a foreign language.) Second language proficiency, in addition to a discipline specialization, appears to be needed in some jobs held by OSSHE graduates. Two trends may influence this need — the changing demographics of Oregon and increasing globalization of the economy. Although the majority say the type of company of their employment is government or education, 20 percent work for a private company. The majority of those who use a language other than English in the workplace are employed in four industries — education (61 percent), professional services (8 percent), health services (6 percent), and public administration (6 percent).

In what occupations and industries do these graduates find employment?

Ninety-seven percent of these advanced degree recipients are employed in managerial and professional specialty occupations, such as executives, managers, engineers, architects, computer scientists, nurses, teachers, lawyers, professors, musicians, and social workers. These are occupations in which tremendous growth is projected for the next decade as the workforce aligns with the Information Age economy (Table 5).

Education by Occupation Type



When asked the industry in which they are employed, 50 percent of OSSHE graduate degree recipients say education (public or private). The remainder are distributed among other industries — 10 percent in health services, 9 percent in other professional services (such as museums, legal services, social services, religious organizations, engineering firms, accounting firms), 9 percent in public administration (unrelated to education and health services), 8 percent durable and nondurable goods manufacturing, and 9 percent scattered in other industries (Table 6).

When sorted by the type of company, these advanced degree recipients are employed in all sectors of the economy including government (24 percent), public schools (33 percent), private firms (23 percent), nonprofit organizations (10 percent), and self-employed (10 percent). Eight out of 10 who work for a private company hold master's degrees (compared to 13 percent with doctorates). For all majors, there appear to be some opportunities in each of these sectors (Tables 7 and 8).

- The largest proportion of engineering graduates are employed in private companies (62 percent), but others are employed in government (32 percent), nonprofits (2 percent), or self-employed (4 percent).

- More than three-fourths of education graduates are employed in public educational organizations, but others have jobs in nonprofit organizations (11 percent), private companies (8 percent), or self-employed (6 percent).

- Of the respondents employed in public schools, 59 percent are in K-12 schools and 41 percent are employed in public postsecondary institutions.

There are employment sector differences.

- Of the 1986-1991 OSSHE advanced degree recipients who say they are employed by a private company, the majority are found in three areas — business (23 percent), math, computer science, and physical science (21 percent), and engineering (12 percent). Almost two-thirds of engineering graduates and more than one-half of business graduates are employed by private companies.

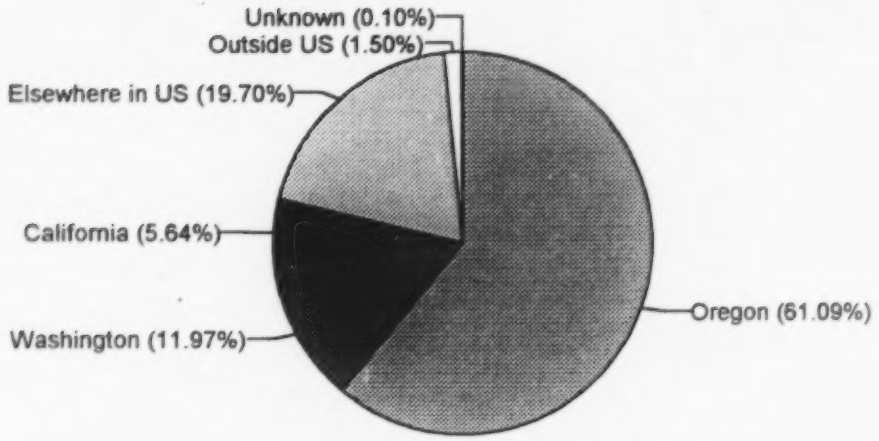
- A large percentage of graduates who say they are self-employed are in the health-related professions (53 percent).

These data suggest that OSSHE graduates are being absorbed into the job market.

Where do OSSHE graduates find employment?

Sixty-one percent of OSSHE advanced degree recipients interviewed work in Oregon, 12 percent in Washington, 6 percent in California, 20 percent elsewhere in the United States, and 2 percent outside the country (Tables 9 and 10). Where graduates work varies somewhat by campus. For example, of those who are employed in Oregon, 42 percent graduated from PSU, 31 percent from UO, and 27 percent from OSU.

Employment Location by Institution

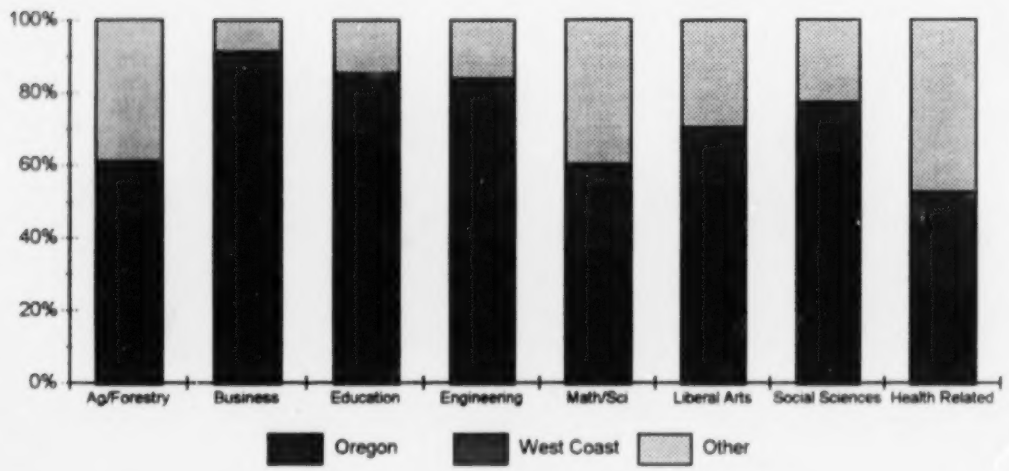


Among those who work in Oregon, 42 percent are employed in the Portland tri-county area, 9 percent in Benton County, 6 percent in Marion County and 21 percent spread among the remaining 30 Oregon counties. Of the respondents employed in Oregon, many are employed near their alma mater —74 percent of those with PSU degrees work in the Portland tri-county area, 58 percent of those with UO degrees work in Lane County, and 30 percent of those who received degrees from OSU work in Benton County (Table 11).

Among those working in Washington state, 29 percent are "across the river" from PSU in Clark County, and 22 percent work in the Seattle, King County area.

The three majors in which more graduates remained in Oregon include business (76 percent), education (68 percent), and social sciences (64 percent). The majors in which smaller proportions of graduates take employment in Oregon include health-related fields (26 percent); math, computer science, and sciences (37 percent); engineering (40 percent); and agriculture and forestry (45 percent) (Table 12). For those graduates who say they are employed in Oregon, the Portland area is a magnet for advanced degree completers in business (64 percent) and engineering (55 percent).

Where Oregon Graduates Work by Major



Do *OSSHE graduates continue their education following degree attainment?*

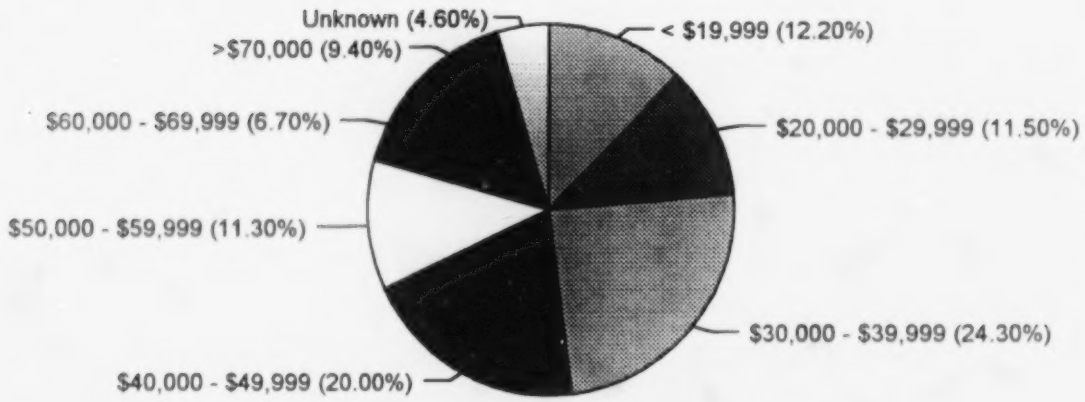
Ninety-five percent of those who received graduate degrees at an OSSHE institution have not gone on to receive a higher degree elsewhere. Among those who continued, nearly three quarters (72 percent) went to universities ranked by the Carnegie Classification system as Research Universities I and II (such as the University of Southern California, University of Wisconsin, University of California). This direction often suggests an interest in future employment in the academy. PSU's master's graduates who continue their education are less likely to continue at a research university. The majority of advanced degree programs offered at PSU result in professional master's degrees (such as the Master's of Business Administration [MBA]) where there is little expectation for continuing at the doctoral level.

Since receiving an OSSHE degree, 39 percent say they have taken classes to improve their ability to find a job. Those most likely to continue their education had master's degrees.

How much are OSSHE graduates earning?

Median personal income in 1995 for graduate degree recipients was between $40,000 and $49,999. More than one in four earned $50,000 or more (Table 13). Of those in the lowest income group (under $20,000), two-thirds are employed part-time.

Income for Employed Degree Recipients



Median personal income for 1995 varied by major for the 1986-1991 advanced degree completers who were interviewed for this study. Majors clustered in three median income groups. Those with higher median incomes ($50,000 to $59,999 range) included graduates in business, engineering, and health-related professions. Those with lower median incomes ($30,000 to $39,999 range) included education, liberal arts, and social science graduates. One-half of those who hold professional degrees earned $50,000 and over compared to four in ten of those who earned doctorates and little more than one in five of master's degree recipients demonstrating the "more you learn, the more you earn."

Those with higher earnings are more likely to say they would do it all over again. Those with lower salaries tend to say they would not do it over again, are less likely to believe education has been important to their success, and are not as satisfied with the education they received.

Did the OSSHE graduates gain practical experience?

Many graduate and professional students gain experience using their content knowledge and skills in a work environment. These experiences include completing an internship (or practicum) in an off-campus site relevant to one's specialization, working with a faculty member on research or policy analysis project, or serving as a teaching or research assistant.

Sixty-five percent of the respondents say they completed an internship, 46 percent say they worked as a research or teaching assistant, and 50 percent indicate they worked on a research or policy-related project with a faculty member (Table 14). Important discipline differences emerged.

Work Place Preparation

	Internship	Research/Policy Project	Research/ Teaching Asst
Ag/Forestry	49.3%	85.1%	86.6%
Business	62.2%	36.9%	21.6%
Education	77.8%	31.6%	22.6%
Engineering	32.1%	79.2%	73.6%
Math/Sciences	34.1%	78.8%	85.9%
Liberal Arts	60.6%	43.6%	72.3%
Social Sciences	60.5%	68.6%	72.1%
Health Related	91.3%	52.2%	17.4%
Totals	65.0%	46.0%	50.0%

Of the respondents who applied what they learned in internships in settings beyond the campuses, they were more likely to earn master's degrees (67 percent compared to 56 percent of those with doctorates). Those who completed an internship are more likely to indicate that education was important to their success (95 percent compared to 87 percent) and indicate they would do it all over again (85 percent compared to 80 percent).

Internships are part of the experiences for some graduates in all fields. Internships tend to be "the rule" in the program requirements of the health-related professions (91 percent) and education (78 percent) and "the exception" for engineering (32 percent) and math and sciences (34 percent) in graduate level study. (However, in addition to one-third of the 1986-1991 master's level engineers who completed an internship, 50 percent of 1994-95 OSSHE engineering baccalaureate graduates completed one. Internships for engineers tend to be more typical at the undergraduate level.)

When looking at the type of company in which graduates are employed, 53 percent of those who took employment in a private company completed internships compared to 67 percent of those in the public sector, 75 percent in nonprofit organizations, and 67 percent of those self-employed. The prevalence of internships is explained by several factors. First, many master's degree programs provide a nonthesis option (typically an internship or community-based project) to the research thesis. Over the years, these programs have become more like professional schools in response to the practical and applied education needs of the students. Second, the culture of many professions — educators and health professions — supports the training of future colleagues.

In addition to internships, one-half of the survey respondents say they had the opportunity to work on a research or policy-related project with faculty. These projects are important for students to develop advanced research and analysis abilities as well as provide opportunities to work in teams. The availability of many of these opportunities depends on the faculty research effort and their successful competition for external funds to support the work. Faculty connections to practitioners in the field are also important for student opportunities to work on policy-related projects.

- OSU graduates are more likely to say they worked on a research project (63 percent compared to 54 percent at UO and 33 percent at PSU).

- Those most likely to work on a research project obtained doctorates (76 percent compared to 67 percent of those who obtained professional degrees and 44 percent of those who obtained master's degrees).

The campus differences are likely to be related to their program emphasis and expectations for faculty to secure external funds.

Forty-six percent of the respondents held research or teaching assistantships. These were more available for doctoral completers (82 percent of doctoral students compared to 61 percent of professional and 38 percent of master's students). These experiences provide opportunities to apprentice for faculty roles.

How do OSSHE graduates rate the education they received?

Based on their experiences since graduation, 24 percent of those who obtained advanced degrees rate the education they received as "excellent," 55 percent "very good," 18 percent "good," 3 percent "fair," and 0.3 percent "poor" (Table 15). When asked if they had to do it all over again, would they go into the same program, 83 percent said "yes."

These graduates interviewed say they are satisfied (94 percent) with the education they received (Table 16). There are no significant differences in satisfaction between graduates of UO, OSU, and PSU. Those who completed professional degrees are slightly more satisfied (98 percent compared to 95 percent of those with doctorates and 94 percent of those with master's degrees). Those who believe their education was important to their future success and those who would do it all over again are more likely to say they are satisfied. Those who said professors did a good job integrating research findings into classroom materials were more likely to be satisfied as were those who had been involved in a research project or policy-related project with a faculty member. Respondents who are the least satisfied tend to have lower personal incomes.

What advice do OSSHE graduates offer to improve graduate programs?

When asked an open-ended question about what advice they would offer to improve the graduate degree programs they were in, 23 percent mentioned things concerning academics (such as class size, availability, selection, quality and content, and program requirements); 18 percent mentioned the value of practical, hands-on experience; 17 percent had suggestions for teaching; and 9 percent expressed concerns about OSSHE's poor state support.

Summary and Conclusions

This study examined the longer-term outcomes for recipients of master's, professional, and doctoral degrees from three public universities in Oregon — University of Oregon, Oregon State University, and Portland State University. Specifically, the study probed the employability of these graduates, their satisfaction with the education they received, and their experiences as students believed critical to their success in the workforce. A random sample was drawn from the alumni records of each university for persons who graduated between 1986 to 1991. It was believed that in five to ten years following their award, graduates would be making strides toward establishing their career directions. Slightly more than 1,200 telephone interviews were completed in November 1996.

The growing importance of knowledge-based industries in the global economy increases reliance on the availability of well-educated persons. The results of this study confirm that high quality graduate and professional programs provide a stream of highly educated workers for Oregon's managerial and professional jobs in support of the state's economy.

The UO, OSU, and PSU graduate and professional degree completers are employed and satisfied with the quality of education they received in Oregon.

The majority of those who complete advanced degrees at UO, OSU, and PSU find jobs in Oregon (61 percent). Economic projections suggest growth in fields requiring a master's degree or higher in a wide range of fields including education, engineering, computer scientists, and business. Oregon employers say they want to be able to hire more of their highly educated workforce from Oregon institutions. A goal of the Oregon business community is to reduce its dependence on inflows of highly educated workers to support economic expansion.

Persons migrate to Oregon to obtain advanced education (master's, professional, and doctoral degrees). UO and OSU recruit graduate students (especially for professional and doctorate study) nationally and internationally as well as regionally and statewide. For example, of the over 3,000 degree-seeking graduate students who enrolled at UO in Fall 1995, slightly more than 50 percent were nonresidents. (Additional residents take graduate courses to enhance their career prospects, but are not seeking degrees.) This study confirms that the universities are magnets for out-of-state students who then choose to remain in Oregon upon graduation. (In this study, we did not ask graduates their

reasons for leaving Oregon. In previous studies of recent graduates completed by OSU, some graduates say lower wages for professional workers in Oregon influenced the decision to leave upon graduation.)

More graduates take employment in Portland than other Oregon regions. Of the UO, OSU, and PSU respondents employed in Oregon, 42 percent took jobs in the Portland metropolitan area (Clackamas, Multnomah, and Washington). Of the PSU graduates employed in Oregon, three-fourths stayed in the Portland area. These results suggest that the net-migration between Portland and the rest of Oregon may favor Portland. The three universities play distinctive roles in providing educated workers for the Portland metropolitan area. UO and OSU appear to play a role in attracting people into the state, many of whom later choose to live and work in Portland. Further investigation is needed to determine if persons are native Oregonians or in-migrants from other U.S. locations.

Some graduates are employed near their degree-granting universities. This finding raises questions about the student subgroups pursuing graduate study. What factors go into the matriculation decision? Two-thirds of the UO, OSU and PSU graduates say "faculty quality" was important in the decision to pursue advanced education. At the same time, geographic proximity of advanced degree programs to their employment is of growing importance to working adults. From this study we know that three-fourths of the graduates say they were employed when they were enrolled not including graduate teaching and research assistantships (73 percent UO, 66 percent OSU, 87 percent PSU). Further investigation of residency at the time of enrollment is needed to determine if UO and OSU are serving a growing proportion of working adults or if graduates are "stayers." The answer may have implications for program design and delivery.

Median personal income in 1995 for graduate degree recipients was between $40,000 and $49,999 in 1995. More than one in four earned $50,000 or more. One-half of those who hold professional degrees earned $50,000 and over compared to four in ten of those who earned doctorates and little more than one in five of master's degree recipients demonstrating "the more you learn, the more you earn."

Sixty-five percent of the UO, OSU, and PSU graduate degree recipients completed an internship. The Oregon Business Council report, *Gaining a Competitive Advantage: The Need for Customer-Driven Higher Education* (June 1996, p. 4), recommends that higher education,

> Offer more practicum experience to students, and possibly faculty members, too, to make course work more relevant to real work and to give more new graduates the practical experience that employers prefer.

In addition to internships, almost one-half worked on a research or policy-related project with a faculty member. Three-fourths were employed while enrolled; for many their participation was driven by their personal workplace experiences.

For students in doctoral programs, 82 percent indicated they worked as a teaching or research assistant. This is an experience highly valued in the academic marketplace as an apprenticeship for later faculty roles. However, national trends suggest a growing number of doctorates are employed in industry and business and opportunities in the academy are becoming more limited in some fields. Future doctorate recipients must be prepared to look beyond the research universities for work.

Twenty percent of the respondents were employed in jobs based in the United States that require the use of a second language on the job. The economic trends toward a global economy and greater diversity in our population suggest that cultural experiences and second language ability of advanced degree recipients may enhance their employability. Foreign language proficiency is needed in educational organizations, public administration, professional services, and health services. Opportunities for retaining language proficiency (either developed earlier in one's educational career or as non-native English speakers) or for using the second language in the context of the workplace may enhance the attractiveness of OSSHE programs for potential students and faculty.

The broad goals of this survey were to obtain valid and reliable information from OSU, PSU, and UO graduate degree recipients regarding their assessment of the value and quality of the education received. Despite the presentation of aggregated data, these universities and the programs are not indistinguishable. Each offers a different mix of programs and serves diverse populations (Table 17).

Table 1

Representativeness of Survey Respondents Compared to OSSHE 1990-91 Advanced Degree Completers (UO, OSU, PSU)

	Survey Respondents		1990-91 OSSHE Graduate Degrees Awarded	
	N	%	N	%
Gender				
Male	559	45.2	1,592	52.7
Female	676	54.7	1,431	47.3
Unknown	1	0.1	0	0.0
Total	1,236	100.0	3,023	100.0
Ethnic Group				
African American	7	0.6	16	0.5
American Indian	12	1.0	22	0.7
Asian American	54	4.4	78	2.6
Hispanic/Latino	13	1.1	21	0.7
European American	1,097	88.8	2,058	68.1
Mixed/Unknown/Decline	53	4.3	828	27.4
Total	1,236	100.0	3,023	100.0
U.S. Citizenship				
Yes	1,169	94.6	1,620	53.6
No	65	5.3	575	19.0
Unknown/Decline	2	0.2	828	27.4
Total	1,236	100.0	3,023	100.0

Source: (1) OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997. (2) OSSHE Fact Book, December 1992.

Table 2

OSSHE Graduate Outcome Survey
1986-1991 Advanced Degree Recipients (UO, OSU, PSU)

Total Sample	3,001
Total Used	2,937
Eligible	1,610
Ineligible	544
Unknown	783
Refusal	365
Completed Interviews	1,236

Source: OSSHE Academic Affairs, Return on Investment Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997.

Table 3

Employment Status
1986-1991 Advanced Degree Completers (UO, OSU, PSU)

	UO		OSU		PSU		Total	
	N	%	N	%	N	%	N	%
Full-Time	309	75.0	345	83.5	316	76.9	970	78.5
Part-Time	73	17.7	41	9.9	69	16.8	183	14.8
Taking Classes	6	1.5	4	1.0	2	0.5	12	1.0
Looking for Work	4	1.0	4	1.0	4	1.0	12	1.0
Not Looking for Work	20	4.8	19	4.6	20	4.8	59	4.8
Total	412	100.0	413	100.0	411	100.0	1,236	100.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997.

Status of Graduates

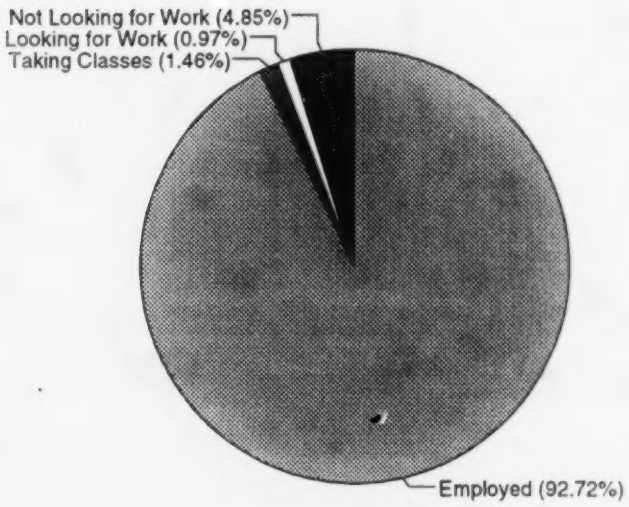


Table 4

Employment Status for Selected Majors
1986-1991Advanced Degree Completers (UO, OSU, PSU)

	Employed	Looking for Work	Other*	Total
Ag/Forestry	92.5%	3.0%	4.5%	100%
Business	95.5%	0.9%	4.4%	100%
Education	93.7%	0.5%	6.3%	100%
Engineering	96.3%	1.9%	1.8%	100%
Math/Sciences	94.1%	0.6%	5.8%	100%
Liberal Arts	87.3%	2.1%	10.6%	100%
Social Sciences	93.0%	1.2%	5.8%	100%
Health Related	82.6%	0.0%	17.4%	100%
Total	93.0%	1.0%	6.0%	100%

NOTE: Includes attending school, retired, homemaker.

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

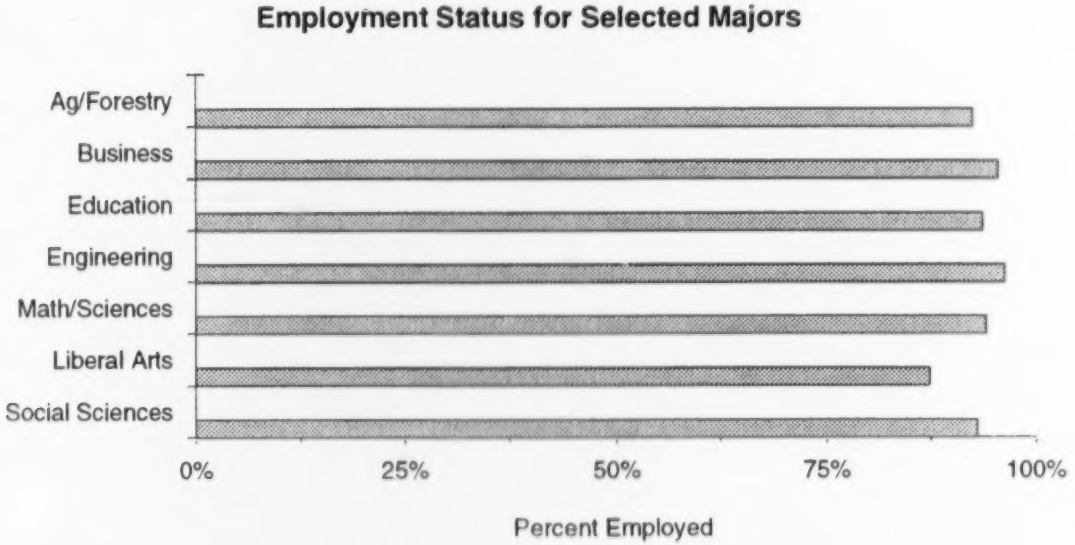


Table 5

Employment by Occupation Type
1986-1991 Advanced Degree Completers (UO, OSU, PSU)

	UO		OSU		PSU		Totals	
	N	%	N	%	N	%	N	%
Manager/Professional	372	97.4	369	95.8	363	94.3	1,104	95.8
Technical/Sales/Admin Support	4	1.0	10	2.6	16	4.2	30	2.6
Service	2	0.5	1	0.3	1	0.3	4	0.3
Other/Unknown	4	1.1	5	1.3	5	1.2	14	1.2
Total	382	100.0	385	100.0	385	100.0	1,152	100.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997.

Employment by Occupation Type

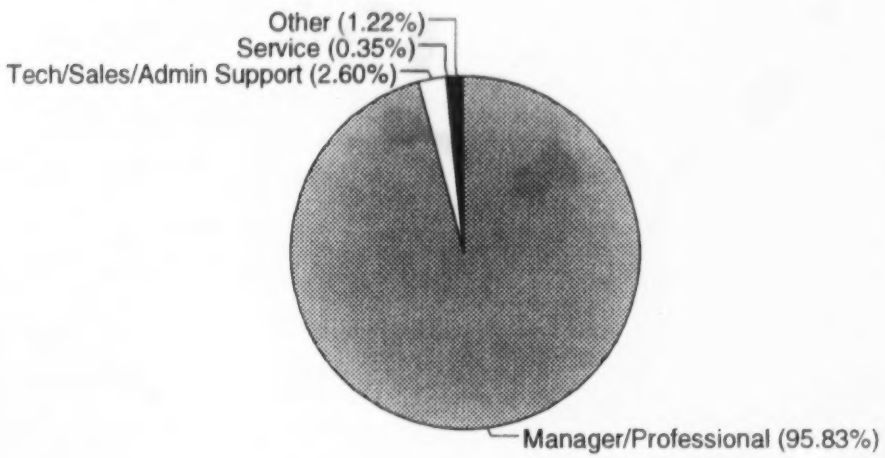


Table 6

Employment by Industry Type
1986-1991 OSSHE Advanced Degree Completers (UO, OSU, PSU)

	UO		OSU		PSU		Total	
Industry	N	%	N	%	N	%	N	%
Ag/Forestry	2	0.5	11	2.9	2	0.5	15	1.3
Construction	5	1.3	2	0.5	2	0.5	9	0.8
Manufacturing	30	7.9	43	11.2	15	3.9	88	7.6
Transportation/Com/Utility	4	1.0	8	2.1	6	1.6	18	1.6
Wholesale/Retail	5	1.3	5	1.3	9	2.3	19	1.6
Finance/Insurance	3	0.8	2	0.5	11	2.9	16	1.4
Business/Repair Svcs	14	3.7	20	5.2	18	4.7	52	4.5
Personal Services	0	0.0	2	0.5	2	0.5	4	0.3
Entertainment/Recreation	3	0.8	0	0.0	1	0.3	4	0.3
Education	222	58.1	168	43.6	189	49.1	579	50.3
Health Services	29	7.6	28	7.3	55	14.3	112	9.7
Professional	27	7.1	35	9.1	42	10.9	104	9.0
Public Administration	33	8.6	49	12.7	26	6.8	108	9.4
Unknown	5	1.3	12	3.1	7	1.8	24	2.1
Total	382	100.0	385	100.0	385	100.0	1,152	100.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997.

OSSHE Employment by Industry (Excluding Education)

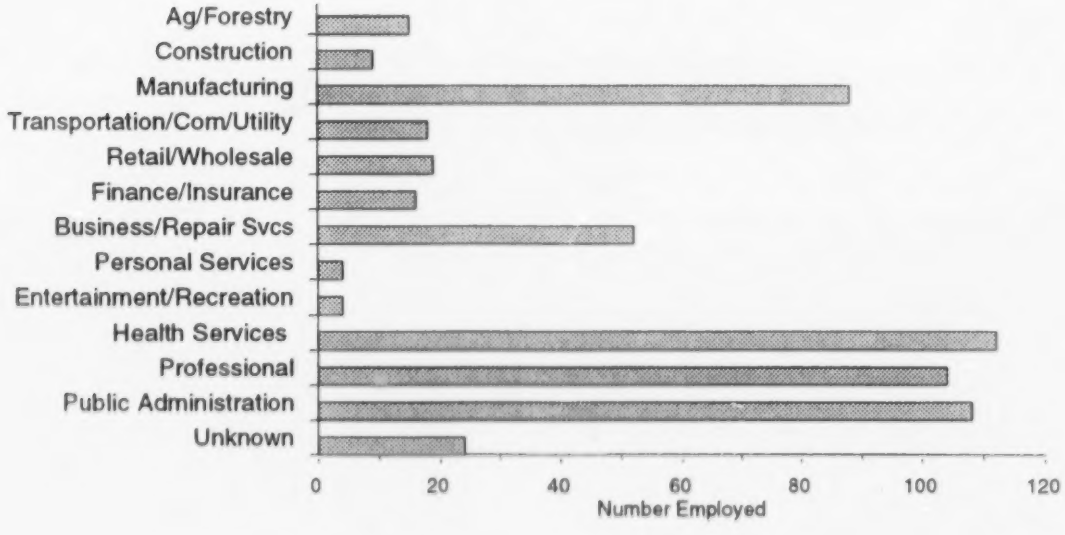


Table 7

Employment by Company Type

	Number	Percent
Private Company	262	22.7%
Government	279	24.2%
Public Schools*	377	32.7%
Non-Profit Org	109	9.5%
Self-Employed	120	10.4%
Unknown	5	0.4%
Total	1152	100.0%

*Public education includes kindergarten through college.

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

Employment by Company Type

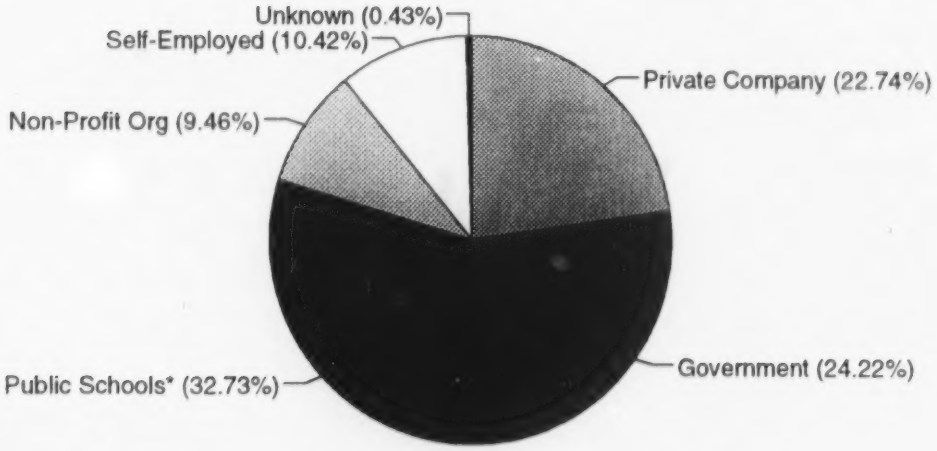


Table 8

Employment by Major and Company Type
1986-1991 Advanced Degree Completers (UO, OSU, PSU)

	Private Co.		Government & Education		Nonprofit		Self Employed		Total	
	N	%	N	%	N	%	N	%	N	%
Ag/Forestry/Fishing	11	17.7	40	64.5	3	4.8	8	12.9	62	5.4
Business	59	55.7	28	26.4	5	4.7	14	13.2	106	9.3
Education	31	7.8	299	75.7	43	10.9	22	5.6	395	34.5
Engineering/Technical	31	62.0	16	32.0	1	2.0	2	4.0	50	4.4
Math/Computer/Physical Science	54	33.8	78	48.8	12	7.5	16	10.0	160	14.0
Liberal Arts/Humanities/Foreign Lang	15	19.0	56	70.9	3	3.8	5	6.3	79	6.9
Social Sciences	17	21.3	42	52.5	9	11.3	12	15.0	80	7.0
Health Related	7	36.8	1	5.3	1	5.3	10	52.6	19	1.7
Other	37	19.1	94	48.5	32	16.5	31	16.0	194	16.9
Totals	262	22.9	654	57.1	109	9.5	120	10.5	1,145	100.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

Table 9

Employment Location by Institution
1986-1991 Advanced Degree Completers (UO, OSU, PSU)

	UO		OSU		PSU		Total	
	N	%	N	%	N	%	N	%
Oregon	218	57.1	190	49.4	296	76.9	704	61.1
Washington	32	8.4	47	12.2	59	15.3	138	12.0
California	27	7.1	29	7.5	9	2.3	65	5.6
Elsewhere in US	89	23.3	117	30.4	21	5.5	227	19.7
Outside US	16	4.2	1	0.3	0	0.0	17	1.5
Unknown	0	0.0	1	0.3	0	0.0	1	0.1
Total	382	100.0	385	100.0	385	100.0	1,152	100.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997.

Employment Location by Institution

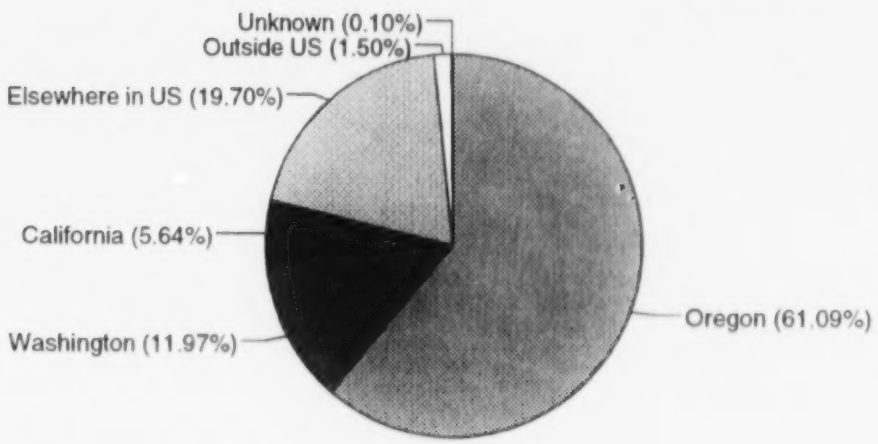


Table 10

Location of Employment by Degree Obtained

	Professional		Doctorate		Master's		Total	
	N	%	N	%	N	%	N	%
Oregon	13	31.0	79	42.5	612	66.2	704	61.1
Washington	6	14.3	15	8.1	117	12.7	138	12.0
California	3	7.1	16	8.6	46	5.0	65	5.6
Elsewhere in US	20	47.6	70	37.6	137	14.8	227	19.7
Outside US	0	0.0	6	3.2	11	1.2	17	1.5
Unknown	0	0.0	0	0.0	1	0.1	1	0.1
Total	42	100.0	186	100.0	924	100.0	1,152	100.0

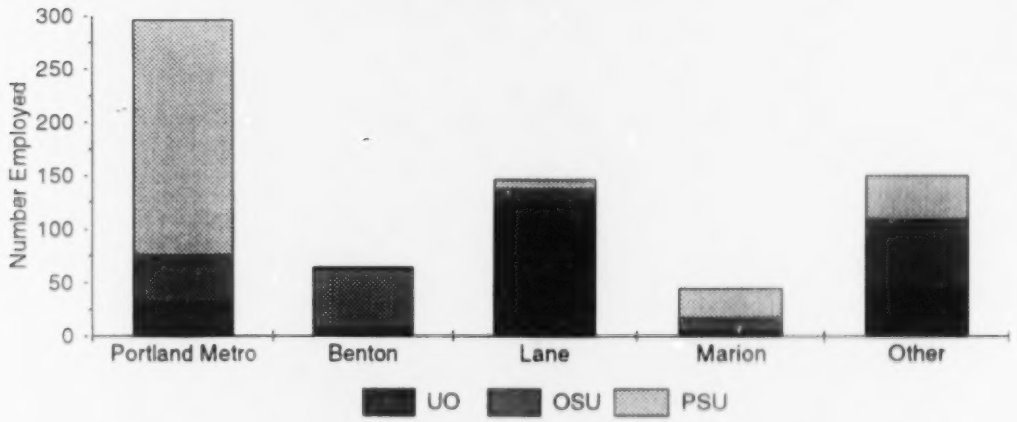
Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997.

Table 11

Employment in Oregon, by County and Institution

	UO		OSU		PSU		Total	
	N	%	N	%	N	%	N	%
Portland Metro	33	15.1	43	22.6	220	74.3	296	42.0
Benton	8	3.7	55	28.9	1	0.3	64	9.1
Lane	126	57.8	12	6.3	8	2.7	146	20.7
Marion	6	2.8	12	6.3	26	8.8	44	6.3
Other	45	20.6	65	34.2	40	13.5	150	21.3
Unknown	0	0.0	3	1.6	1	0.3	4	0.6
Total	218	100.0	190	100.0	296	100.0	704	100.0

Employment in Oregon by Area



Portland Area Employment by Major
1986-1991Advanced Degree Completers (UO, OSU, PSU)

	Portland Area
Ag/Forestry	3.6%
Business	63.8%
Education	35.5%
Engineering	55.0%
Math/Sciences	35.6%
Liberal Arts	28.9%
Social Sciences	47.1%
Health Related	27.8%
Total	42.1%

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

Table 12

Geographic Location of Employment by Major
1986-1991Advanced Degree Completers (UO, OSU, PSU)

	Oregon	West Coast	Other	Total
Ag/Forestry	45.2%	16.2%	38.7%	100.0%
Business	75.5%	16.0%	8.5%	100.0%
Education	68.3%	17.1%	14.6%	100.0%
Engineering	40.0%	44.0%	16.0%	100.0%
Math/Sciences	36.9%	23.8%	39.4%	100.0%
Liberal Arts	54.9%	15.9%	29.2%	100.0%
Social Sciences	63.8%	13.8%	22.5%	100.0%
Health Related	26.3%	26.4%	47.4%	100.0%
Totals	61.1%	17.6%	21.3%	100.0%

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

Where Oregon Graduates Work by Major

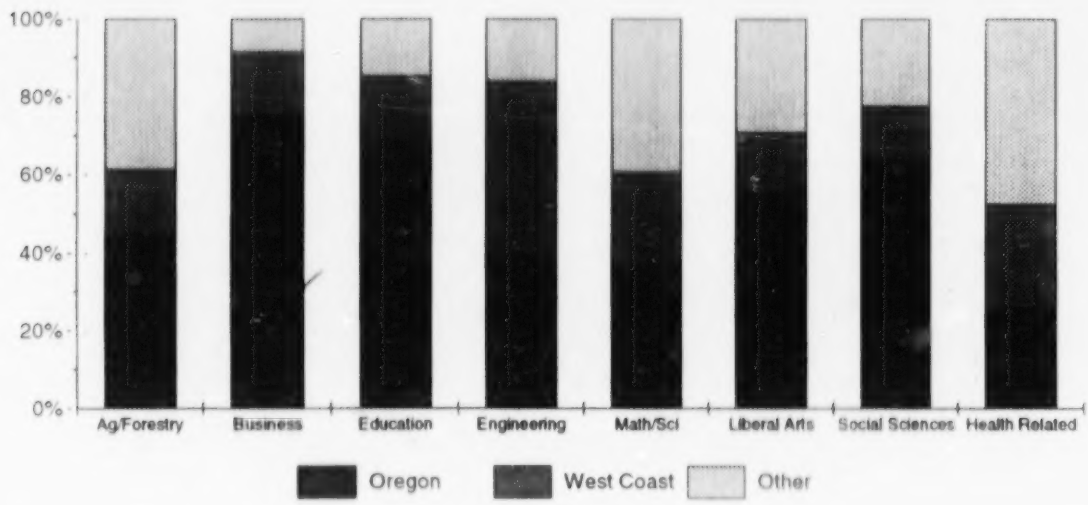


Table 13

Personal Income in 1995
1986-1991Advanced Degree Completers (UO, OSU, PSU)

Income	Percent in income range
< $19,999	12.2%
$20,000 - $29,999	11.5%
$30,000 - $39,999	24.3%
$40,000 - $49,999	20.0%
$50,000 - $59,999	11.3%
$60,000 - $69,999	6.7%
> $70,000	9.4%
Unknown	4.6%

NOTE: 1995 personal income from salaries and wages.

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

Personal Income in 1995 for Employed Degree Recipients

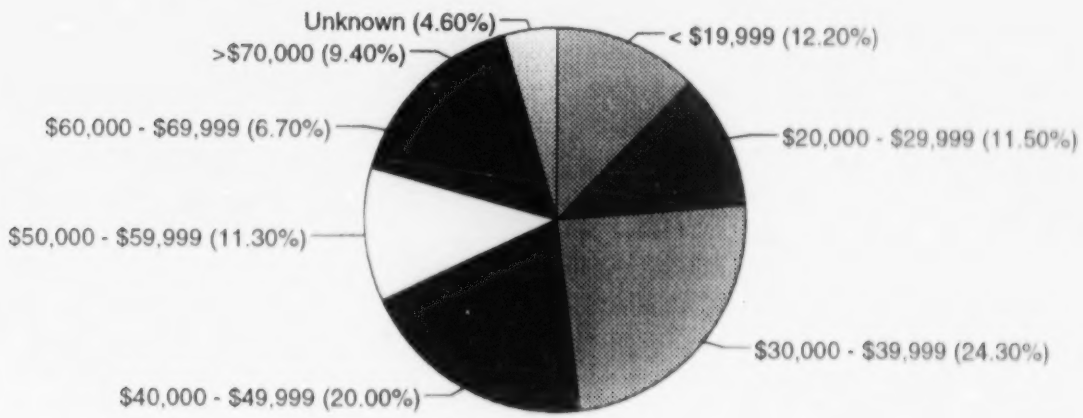


Table 14

Work Place Preparation
1986-1991Advanced Degree Completers (UO, OSU, PSU)

	Internship	Research/Policy Project	Research/ Teaching Asst
Ag/Forestry	49.3%	85.1%	86.6%
Business	62.2%	36.9%	21.6%
Education	77.8%	31.6%	22.6%
Engineering	32.1%	79.2%	73.6%
Math/Sciences	34.1%	78.8%	85.9%
Liberal Arts	60.6%	43.6%	72.3%
Social Sciences	60.5%	68.6%	72.1%
Health Related	91.3%	52.2%	17.4%
Total	65.0%	46.0%	50.0%

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

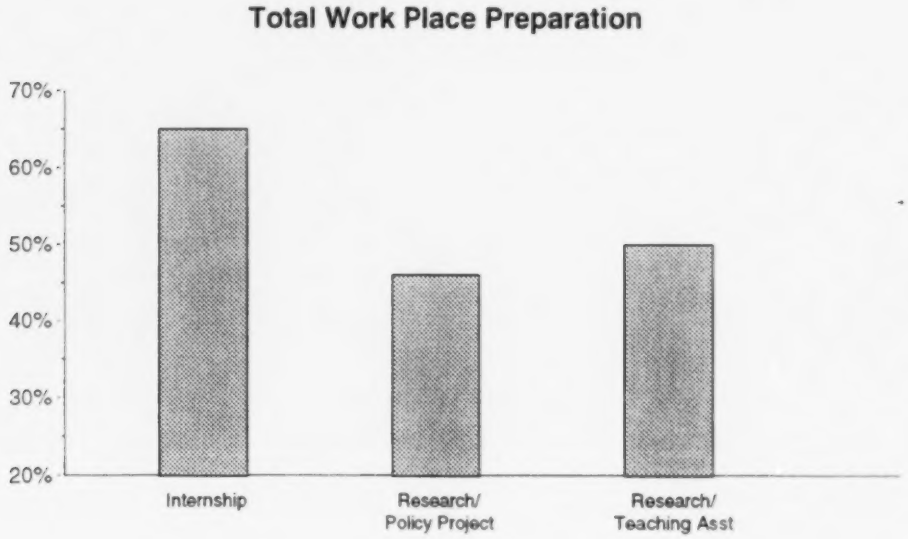


Table 15

Ratings for Education Received, 1986-1991
1986-1991 Advanced Degree Completers (UO, OSU, PSU)

	UO	OSU	PSU	Total
Excellent	30.1	21.5	20.7	24.1
Very Good	47.3	59.8	56.7	54.6
Good	18.7	15.5	19.7	18.0
Fair	2.7	2.4	2.9	2.7
Poor	0.7	0.2	0.0	0.3
Unknown	0.5	0.5	0.0	0.3
Total	100.0	99.9	100.0	100.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

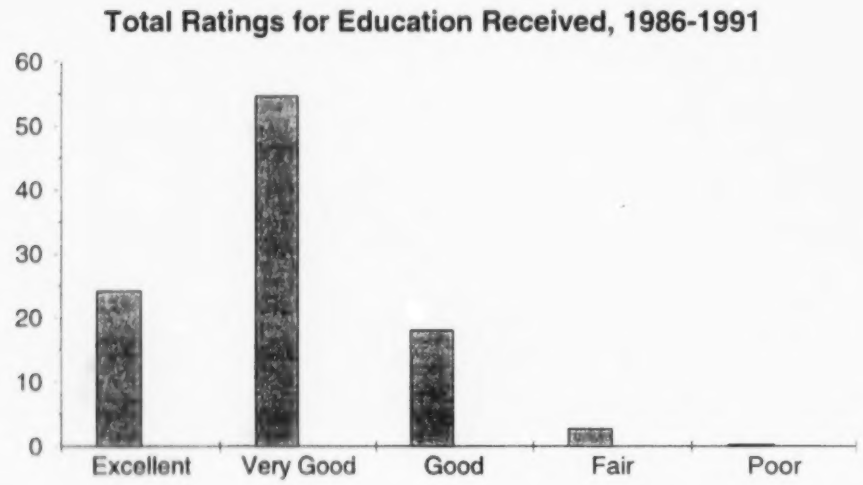


Table 16

Satisfaction with Education
1986-1991 Advanced Degree Completers (UO, OSU, PSU)

	UO	OSU	PSU	Total
Very Satisfied	62.1	59.1	59.6	60.3
Somewhat Satisfied	30.6	36.1	35.0	33.9
Somewhat Dissatisfied	5.3	3.4	4.6	4.4
Very Dissatisfied	1.5	1.5	0.7	1.2
Unknown	0.5	0.7	0.0	0.2
Total	100.0	100.8	99.9	100.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of Advanced Degree Completers of 1986-91, January 1997.

Total Satisfaction with Education Received, 1986-1991

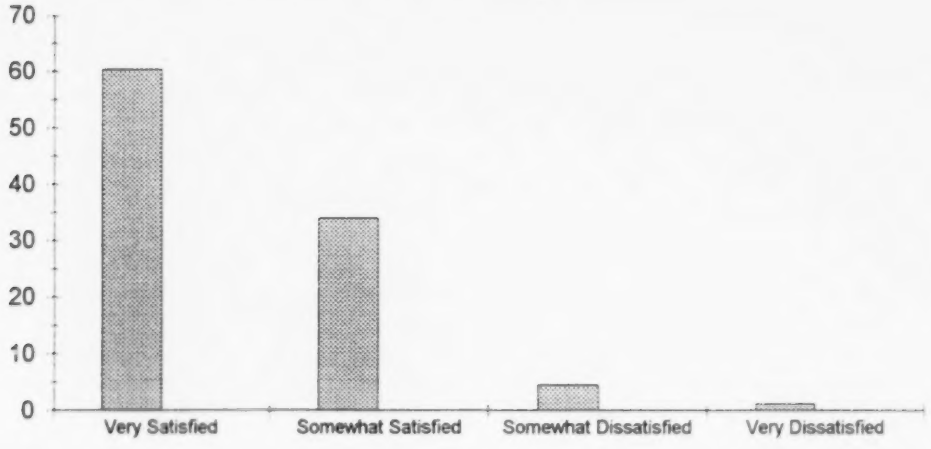


Table 17

Comparison of Respondents
1986-1991 Advanced Degree Completers (UO, OSU, PSU)

	UO N=412 %	OSU N=413 %	PSU N=411 %
Gender *(Male)*			
Master's	40.5	54.5	31.0
Doctorate	52.9	75.3	66.7
Professional	100.0	65.6	20.0
Race/Ethnicity *(European American)*			
Master's	89.1	87.0	91.3
Doctorate	87.3	84.3	83.3
Professional	83.3	87.5	100.0
Employment *(Full-time)*			
Master's	70.4	81.5	76.3
Doctorate	87.3	86.5	0.0
Professional	100.0	93.8	100.0
Employment *(Part-time)*			
Master's	21.4	11.6	17.3
Doctorate	7.8	6.7	0.0
Professional	0.0	3.1	0.0
Looking for Work			
Master's	.7	1.4	1.0
Doctorate	2.0	0.0	0.0
Professional	0.0	0.0	0.0
Income Above $50,000			
Master's	19.0	25.0	25.2
Doctorate	45.7	41.5	66.6
Professional	50.0	50.0	40.0
Very or Somewhat Satisfied with Education			
Master's	92.6	94.8	94.5
Doctorate	95.0	95.5	100.0
Professional	100.0	96.9	100.0
Rate Education Excellent or Very Good			
Master's	73.9	80.1	77.4
Doctorate	89.0	82.0	83.3
Professional	100.0	93.8	80.0

Source: OSSHE Office of Academic Affairs, Return on Investment: Employment Five and Ten Years Later, Survey of the Advanced Degree Completers of 1986-91, January 1997.